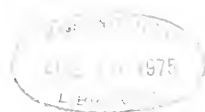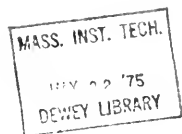FOREIGN DIRECT INVESTMENT,
INDUSTRIALIZATION,
AND SOCIAL CHANGE

Stephen J. Kobrin[*]

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FOREIGN DIRECT INVESTMENT,

INDUSTRIALIZATION,

AND SOCIAL CHANGE

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At present, there is little general agreement whether Foreign Direct Investment (FDI) does (or even can) make a net positive contribution to the process of development. On the one hand, proponents note that FDI provides a means for the transfer of capital, technology, and managerial skills to developing countries, that it can generate considerable tax revenues, create employment and provide access to international markets. On the other hand, negative arguments range from its excessive cost and/or the inefficient use of resources vis-a-vis development goals to increased dependence upon industrial countries, a loss of sovereignty, and the undermining of cultural values. Often points can be argued both ways depending on one's vantage point. For example, FDI can be seen as either a means of breaking local monopolies, or as dominating and thus restricting competition in host country markets.

Even after the hyperbole on both sides has been cleared away, the answer is by no means determinate. FDI has the potential to transfer much needed resources to developing countries. Yet, resources are not transferred in the abstract; they are embodied in a business enterprise responsible to an authority in an industrialized country interested in maximizing an objective which may or may not relate positively to development goals. Furthermore, while much of the argument (and certainly the vast majority of empirical work) to date has concentrated on its "economic" effects, it is clear that FDI is enmeshed

in the entire socio-cultural and political fabric of the host society.
FDI is an agent in the process of cultural borrowing that constitutes
industrialization; it is a cross-cultural change agent.[1]

The objective of this research is to empirically investigate the
relationship between FDI, as a vehicle for the cross-cultural transfer
of management and technology, and social change in developing countries.
The investigation is cross-national, with data obtained from fifty-
nine countries. After a theoretical framework is presented, three
conceptually significant aspects of social modernization are derived
from a larger number of raw indicators via factor analysis. A relation-
ship is then established between each of the aspects of social structure
(as dependent variables) and an index of industrialization. An index
of FDI (relative to economic size) is then introduced as a second
independent variable in both simple additive and multiplicative or
interactive form. The paper concludes that while there is no evidence
of a direct or additive relationship between the aspects of social structure
and the relative importance of FDI, an interactive relationship is con-
sistent with the data.

Industrialization and social modernization

1. Industrialization, defined as the application of inanimate
sources of power to the productive process,[2] inevitably leads to an
increased emphasis on economic efficiency and increases in the scale
of productive enterprise.[3] The requirements of both efficiency and

scale conflict with the diffused roles, economic independence and
self-sufficiency, very restricted horizontal and vertical mobility,
ascriptively determined status, particularistic relationships, and
in general, the social structures characteristic of traditional soci-
eties.[4] This conflict between the requisites of industrialization
and the structure of traditional life results in pressures for change.
The changes in social structure that result directly from the indus-
trialization of a traditional society are explicitly defined as social
modernization in this research.

2. The industrialization of the current Less Developed
Countries (LDCs) can be characterized as a process of acculturation
or culture contact.[5] This involves the transfer of machines, products,
technology, managerial skills, and importantly, entire formal organi-
zations from the industrialized Western nations.[6] However, the indus-
trialization of the LDCs tends to be inverted[7] relative to the Western
experience. In the West, productive institutions and social structures
evolved simultaneously over an extended period of time. In the LDCs
productive institutions and organizations tend to be imported and
superimposed upon traditional societies.

Thus, industrialization is introduced as an exogenous variable
which in turn affects the symmetry of its causal relationship with
social modernization.[8] To a significantly greater extent than was
true in the West, the flow of causality is unidirectional; industrial-
ization in the LDCs may be taken as producing or causing changes in
social structure or social modernization.[9]

3. The broadscale industrialization of traditional societies results in a cross-cultural convergence of social structures to a more limited range of alternatives.[10] This applies only to those social structures directly affected by industrialization; it does not apply to society in general, to political systems or to all aspects of culture. It simply recognizes that the range of variation in social structures consistent with productive institutions narrows as a society industrializes.

Furthermore, convergence is a long-term process and there are very significant differences in the structure of societies at early and intermediate stages of industrialization. This variation can be taken as a function of: (1) preindustrial social structure and (2) the path or trajectory of industrialization.[11]

4. The path or trajectory of industrialization is a function of the nature of the cross-cultural contact or the process of acculturation.[12] Contacts can be indirect (printed matter) or direct (student exchanges) and discontinuous (technical aid missions) or continuous (colonialization). While the ultimate results of cultural borrowing depend upon the aspect of culture transferred, the nature of the contact, and host receptivity, one would expect that the chances of a successful transfer and adoption are greater (ceteris paribus) the more direct and continuous the contact. Thus, the extent of the pressure for social modernization (as defined in this research) is a function of the path or trajectory of industrialization which in turn depends, to a large extent, upon the nature of the culture contact.

Foreign Direct investment

Foreign direct investment involves equity ownership extended
across national frontiers accompanied by a significant degree of
managerial control.[13]   In the context of this research FDI serves
primarily as: (1) a vehicle for the transfer of the basic elements
of industrialization -- management and technology -- and (2) a means
for Western investors to exert a direct and continuous influence
(managerial control) in LDCs.

Since FDI serves as important, if not the primary, vehicle for
the transfer of the institutions of industrialization to LDCs,[14] it
must, by definition, affect the process of social modernization.
However, if it has a unique effect, we should be able to demonstrate
that the process of cross-cultural transfer associated with FDI differs
from the other vehicles for the transfer and diffusion of the institu-
tions of industrialization. It is posited that this unique effect
exists and is a function of: (1) the direct and continuous nature
of the culture contact associated with FDI and (2) differences in
the philosophy and style of management found in indigenous and foreign
enterprise.

The implications of the first point should be clear from the
discussion thus far. FDI provides for a direct and continuous contact
between cultures. Thus, ceteris paribus, to the extent FDI is rela-
tively important in a given society, one would expect industrialization
to follow a path which intensifies the pressures for social modernization.
FDI acts as a change agent or catalyst; it affects the pace and the

extent of the social changes resulting from industrialization.

The second point requires some explanation. To the extent large scale indigenous enterprises exist in a relatively traditional society, they are likely to be owned and managed by individuals of high status.[15] It is reasonably clear that large scale industrial enterprises do not generally grow out of small commercial ventures. In many LDCs, upper status individuals are the only ones with the capital (or access to capital), organizational ability, and importantly, the connections often required.

To the extent such individuals are either a product of or owe their position to the traditional social system, there is little impetus to innovate -- to establish new patterns of social relationships -- and much pressure to accomodate. In contrast, the foreign controlled firm occupies a position analogous to that of the "marginal man"[16] in the host culture. While integrated into the host socio-economic system, its origins are rooted in an industrialized culture and it is responsive to external direction. Thus, within the constraints posed by the host social system, it is more likely to innovate and less likely to reach accommodation with traditional values and relationships than is the indigenous firm. Except as the realities of the local environment require, the foreign controlled enterprise is less likely to be bound by traditional attitudes and values and traditional social relationships.

Managerial recruitment policies provide a case in point. Studies in both Brazil and India[17] have shown that foreign controlled firms are more likely to recruit and promote capable lower status individuals

into managerial positions than are indigenous enterprises. The
latter tend to be owned and managed by local elites with recruit-
ment (at least to the managerial ranks) so limited. Thus, within
limits, foreign firms may provide a channel for upward mobility that
either does not exist or is severely restricted in a traditional society.

In net, what is posited is that first, industrialization, as a
process of cross-cultural transfer of institutions, produces or
causes changes in the social structure of traditional societies
(social modernization). Second, to the extent FDI is relatively
important in a given society we would expect the pressures for
social modernization (produced by industrialization) to be intensified.

In operational terms we are positing an interactive relationship.
We would not expect to find a direct or additive relationship between
social modernization and the relative importance of FDI alone; they
would not be correlated. (We would also hypothesize that the relative
importance of FDI to a society and its level of industrialization
would be uncorrelated.) Rather, FDI interacts with or intensifies
the relationship between social modernization and industrialization.
The relationship between social modernization and industrialization
is not the same -- in terms of both magnitude and slope -- at all levels
of FDI.

Research method

The investigation entails a quantitative, cross-sectional analysis
of variables over fifty-nine developing countries. All non-socialist
bloc[18] LDCs that were sovereign national units in 1965 and of sufficient

size[19] (a population of over one million and a GNP of at least $500
million) to represent comparable national entities are included. At
the "upper limit" a LDC is defined by a GNP per capita of less than
$1,000.[20] The sole exception is Japan, which is eliminated (following
Kuznets)[21] on the basis that its 1965 GNP per capita ($861) did not
reflect its level of socio-economic development. Appendix I provides
a country list.[22]

    The analysis can be broken down into three steps: quantification
of (or the development of indices representing) aspects of social
modernization, industrialization and the relative importance of FDI;
establishing a relationship between the various aspects of social
modernization and industrialization; and last, adding FDI as a second
independent variable and determining the nature of its relationship
(if any) to social modernization.

Development of indices

    The seventeen raw indicators[23] of social development selected
to serve as a basis from which aspects of social modernization are
derived include both quantitative measures, such as literacy and
school enrollment ratios, derived from published sources[24] and qualitative
estimates of such factors as social organization and the modernization
of outlook obtained primarily from the work of Adelman and Morris or
Banks and Textor.[25] Missing data is estimated by reference to other
sources and by regression on similar and highly correlated indicators.[26]

    The raw data is comprised of a rather large number of indicators,

which by definition (they are all intended as measures of social development), are highly correlated and interrelated. The problem faced is thus to reduce this mass of indicators to a smaller number of variables, each of which represents a conceptually different aspect of modernization. Factor analysis, which provides an empirical means for deriving constructs from raw attributes,[27] is used for this purpose.

The index of industrialization consists of an unweighted linear average of indices of power consumption per capita and the proportion of GDP arising from the manufacturing sector.[28] The definition of industrialization (page 2 above) suggests power consumption per capita as a logical indicator. Manufacturing GDP is added to provide a measure of the breath of industrialization: very resource-intensive countries may consume relatively large amounts of power in an isolated economic (or geographic) sector.

The source for FDI data is the thorough study, <u>Stock of Private Direct Investments by D.A.C. Countries in Developing Countries, Year-End 1967</u>, published by the O.E.C.D. in 1972. This reports book value by sector and by country[29] of origin in 1967. However, what is of interest is not the absolute, but rather a relative measure of FDI -- its importance to the host economy. Furthermore, as agricultural investment tends to be rather singular in many respects,[30] only non-agricultural FDI is considered in this research. The index of FDI then consists of non-agricultural book value divided by non-agricultural GDP as a measure of economic size. The final index is thus a measure of the relative

importance of FDI to the host economy. (As development indicators are often highly skewed, variables are transformed logarithmically if a histogram indicates it would be appropriate.)[31]

Social modernization and industrialization

The relationship between each of the aspects of social modernization (derived via factor analysis) and industrialization is then established through regression analysis with the former as the dependent variable. Six zero-one dummy variables are included in the regression equations[32] to represent the major world regions -- Latin America, Europe, North Africa, Sub-Saharan Africa, the Near East and Asia[33] -- primarily as proxies for differences in pre-industrial social structure. While it is by no means suggested that the regions are even relatively homogeneous, inter-regional differences -- in terms of family organization, for example -- are sufficiently greater than intra-regional differences to make the indicator valid as a proxy.

FDI: testing for interaction

The last step involves including FDI as a second independent variable and determining the nature of the relationship, if any, between it and social modernization. The problem can be summarized as follows:

$$SM = a + bIND + cFDI + dIND \times FDI \qquad (1)$$

where SM represents a given aspect of social modernization, IND the index of industrialization and FDI the index of foreign direct investment relative to economic size. If the coefficient c is significant, an additive or direct relationship between social modernization and

FDI would be confirmed. If d is significant, an interactive relationship would be indicated. (There is no reason to expect that FDI -- as a relative measure -- and IND would be correlated; in point of fact, analysis indicates they are not.) However, the conceptual framework posits that there is no direct relationship between social modernization and FDI. If that is the case, c should not be significant and the problem reduces to:

$$SM = a + bIND + dFDI \times IND \qquad (2)$$

However, $dFDI \times IND$ specifies a particular multiplicative relationship that may or may not "fit" the actual curve. The problem can be circumvented by categorization and the use of dummy (zero-one) variables.[34] Thus both industrialization and FDI are categorized (their respective ranges divided into four equal "levels") and represented by a series of four dummy variables. The term $FDI \times IND$ is then represented by a 4×4 matrix ($FDI_1 IND_1$ to $FDI_4 IND_4$) known as a system of "pattern" variables. $FDI_1 IND_1$ (or X_1), for example, would be one if a case is contained in both the lowest level of FDI and the lowest level of industrialization.

If R is a dummy variable representing region and IND and FDI are both in categorical form, then the additive model takes the form:[35]

$$SM = a + b_1 IND_1 + \ldots + b_4 IND_4 + c_1 FDI_1 + \ldots c_4 FDI_4 \qquad (3)$$
$$+ d_1 R_1 \ldots \ldots + d_6 R_6$$

If X is a "pattern" variable the interactive model is then:

$$SM = a + b_1 X_1 + b_2 X_2 \ldots + b_{16} X_{16} + c_1 R_1 \ldots \ldots + c_6 R_6 \qquad (4)$$

The hypothesis that a relationship between social modernization and

FDI exists and is interactive rather than additive or direct is then
established by testing both models sequentially. With both independent
variables in dummy variable form, each aspect of social modernization
is regressed first on the additive (3) and then on the interactive (4)
model and the variance captured (R^2) compared. The interactive
hypothesis is taken as confirmed if the interactive model accounts
for the significantly[36] greater percentage of the variance of a given
aspect of social modernization than does the additive model.[37]

Research findings

Factor analysis (using a principal axis solution) was applied to
seventeen raw indicators of social modernization and the factors
extracted were then submitted to a Varimax rotation.[38] Both routines
are widely used and require little discussion. The raw indicator
variables are listed in table 1 and the matrix of rotated factor
loadings in Table 2. (Appendix II provides a more detailed list of
variables including data on measurement and sources.)[39]

The loadings (shown in table 2) are a measure of the degree to
which a given variable is associated with a factor; they are correlation
coefficients between variables and factors. The column headed by h^2
contains communalities or the percentage of the common variance of a
given variable accounted for by the factors in total; it is the sum
of the squares of the loadings of a variable on each of the factors.
As the factors were orthogonally rotated, the loadings define the major
clusters of interrelationships among the variables and the factors are
independent. While interpretation is necessarily subjective, the

the meaning of a factor may be inferred from those variables loading most highly on it.

Inspection of the factor matrix reveals that the three rotated factors capture 71% of the variance the seventeen variables have in common. Thus a considerable gain in simplicity has been achieved ar a relatively low cost.

The variables which load most highly on the first factor include the percentage in traditional agriculture (loading negatively), the percentage in mining and manufacturing, the character of agricultural organization, the importance of the middle class, dualism, modernization of outlook, the character of the bureaucracy and the influence exerted by associational groups. This factor then represents the movement from diffused and traditional agricultural roles into more differentiated roles in the mining and manufacturing industries and commericial agriculture and the associated general societal changes. It is thus named role differentiation or roles.[40]

The second factor is the most clearly defined and the easiest to interpret. It includes literacy, the school enrollment ratios, the index of human resource utilization, urbanization and transportation. As all are measures (or requisites of) horizontal or vertical mobility, the factor is taken as a measure of mobility and will be so named. (Literacy loads almost evenly across all three factors; its loading on the second is highest by only .02.[41] It is felt however, that its inclusion with the second factor is justified as it is both a prerequisite for mobility and a function of education.)

Variables loading highest on the third factor include basic family structure, the influence of non-associational groups and cultural and linguistic fractionalization. As the last two load negatively, this factor can be interpreted as encompassing the transition from tribes and extended families to nuclear families, a corresponding lessening of the influence of non-associational groups and and increasing integration and homogeneity of society as cultural and linguistic differences break down. The third factor then describes basic changes in the orgnization of a society and is named <u>social organization</u>.

Social modernization and industrialization

The next step involves establishing a relationship between the factor scores[42] (aspects of modernization) and industrialization. While, as expected, roles and industrialization are highly correlated (a simple R of .90), mobility and social organization (the second and third factors) turn out to be virtually uncorrelated with industrialization. While this was certainly not anticipated -- a high correlation between the aspects of modernization and industrialization should follow from the definition of the former -- it is a function of the very high correlation of the first factor with industrialization and the statistical independence of factor scores.

Factor analysis extracts statistically independent factors which are, by definition, maintained through an orthogonal rotation. In practice, the correlation between factors (or more precisely factor scores) is virtually zero. Thus, in the case at hand, if the first factor (roles) is both highly correlated with industrialization and

independent of the second and third factors (mobility and social
organization), then the latter two factors must be virtually uncorrelated
with industrialization. While the "problem" this presents is exogenous
to the factor analysis (it arises only because we want to relate the
resulting scores to another variable -- industrialization) it prevents
use of the scores for the second and third factors in further analysis.
The "problem" was circumvented by using the factor loadings as weights
in simple linear indicies composed of the variables loading most highly
on the second and third factors. While this procedure sacrifices the
independence of the factor scores, it allows development of indices
that represent the concepts embodied in the second and third factors
which can be used in further analysis.

The correlations between roles (factor scores), mobility, and
social organization (indices), and industrialization are shown in Table 3.
While mobility and social organization correlate strongly and positively
with industrialization, they do so at a lower level then does roles.

Equations five through seven show the results of regressing each
of the aspects of social modernization on the index of industrialization
and the dummy variables representing region. (Only terms with coefficients
significant at the .05 level are shown. The t statistic is shown in parenthesis.)

$$\text{Roles} = 2.52 + 4.07\text{IND} - .39\text{Afr.} + .56 \text{ Eur} \quad (R^2 = .87) \qquad (5)$$
$$\phantom{\text{Roles} = 2.52 + } (10.97) \quad (-2.08) \quad (2.14)$$

$$\text{Mob.} = -6.63 + 18.50\text{IND} \qquad (R^2 = .80) \qquad\qquad (6)$$
$$\phantom{\text{Mob.} = -6.63 + } (8.94)$$

$$\text{Soc. Org.} = 1.80 + 4.63\text{IND} - 4.08 \text{ Afr.} + 4.41\text{LA} + 4.67\text{Eur} \quad (7)$$
$$\phantom{\text{Soc. Org.} = 1.80 + } (2.60) \quad (-4.56) \quad (4.76) \quad (3.72)$$
$$(R^2 = .85)$$

Two points are in order. First, the Near East, North Africa
and Asia were not significant (at the .05 level) in any of the
equations. Only the "least" industrialized region (Africa) and the
two "most" industrialized regions (Latin America and Europe) appear.
Thus, region -- as a proxy for pre-industrialized social structures
and/or relationships with the West -- is significant only at the
extremes of industrialization. Second, while adding region resulted
only in a moderate increase in the variance explained for roles and
mobility, it resulted in almost a doubling of the R^2 for social
organization (see table 3). Thus factors exogenous to industrial-
ization -- in this instance we would suggest pre-industrial social
structures -- account for half of the variance of social organization.
This appears reasonable; tribal organizations in Africa and the
nuclear family in parts of Latin America both preceded the introduction
of industrialization and are probably the most resistant to change
of the three aspects studied.[43]

Foreign direct investment

At this point the hypothesis regarding the nature of the relation-
ship between social modernization and FDI (relative to economic size)
can be tested. First, FDI is simply added to equations five through
seven as a second independent variable to determine if a direct rela-
tionship exists. (Regional variables are not shown; as before the t
statistic is in parentheses.)

$$\text{Roles} = -2.56 + 4.09\text{IND} - .01\text{FDI} \quad (R^2 = .87) \qquad (8)$$
$$\phantom{\text{Roles} = -2.56 + }(9.41) \phantom{\text{IND} - .0}(-.22)$$

$$\text{Mob.} = -6.95 + 19.29\text{IND} + 0.5\text{FDI} \quad (R^2 = .80) \qquad (9)$$
$$\phantom{\text{Mob.} = -6.95 + 1}(8.08) \phantom{\text{IND} + 0.}(.13)$$

$$\text{Soc. Org.} = -.08 + 6.26\text{IND} - .54\text{FDI} \quad (R^2 = .85) \ (10)$$
$$\phantom{\text{Soc. Org.} = -.08 + 6.}(3.18) \phantom{\text{IND}} (-1.08)$$

It is clear that a direct or additive relationship cannot be established between any of the aspects of social modernization and FDI. Only in the case of social organization does the coefficient of FDI even approach significance at the .05 level and adding FDI does not increase the explained variance (R^2) compared with equations five through seven.

As described above, the interactive hypothesis was tested by comparing the R^2 of categorized additive and interactive models.[44] The additive models are identical to equations eight through ten excepting that IND and FDI are categorized and represented by two sets of three zero-one dummy variables, (the dummy variables representing region are also included in each instance). The regression equations are shown in appendix III.

The interactive models consist of each of the aspects of modernization regressed on the pattern variables created from FDI and Industrialization and the dummies representing region. As industrialization and FDI were both transformed into four level categorical variables, their combination resulted in sixteen possible pattern variables (a 4 x 4 matrix). However, it should be noted that all interactive models did not contain sixteen pattern variables. First, some of the pattern variables did not contain any cases. Second, pattern variables were often combined where logical[45] and

where the combination did not result in any loss of explanatory power.

Equations eleven through thirteen show each of the aspects of social modernization regressed on the pattern variables. Again, only variables significant at the .05 level are shown and the regional variables are not presented. In each instance X_1 (FDI_1IND_1) was dropped to avoid redundancy and X_4 (FDI_1IND_4) contains no cases. Where variables have been combined, they are shown as sums. (Visualization of the interactive models may be facilitated by reference to appendices IV, V and VI, which show the pattern variables in matrix form.)

$$\text{Roles} = -1.99 + 2.28X_3 + 1.07(X_5 + X_9 + X_{13}) + 1.38X_6 + \quad (11)$$
$$1.94X_7 + 2.57X_8 + 1.80(X_{10} + X_{14}) + 1.58X_{11} +$$
$$2.65X_{12} + 2.52X_{15} + 2.30X_{16} \quad (R^2 = .85)$$

$$\text{Mob.} = -4.59 + 11.56X_3 + 5.51X_6 + 8.12X_7 + 10.99X_8 + \quad (12)$$
$$6.47(X_9 + X_{13}) + 7.78(X_{10} + X_{14}) + 6.53 (X_{11} + X_{15})$$
$$+ 10.4(X_{12} + X_{16}) \quad (R^2 = .78)$$

$$\text{Soc. Org.} = 1.68 + 5.32X_2 + 5.94X_3 + 4.61X_{16} \quad (R^2 = .89) \quad (13)$$

The R^2 for the categorized additive model (appendix III) and the interactive model (equations eleven through thirteen) are shown in table 4. It should be noted that categorization of the additive model did not result in a great loss of explanatory power. The R^2s shown in table 4 are only four to seven points lower than those of the continuous additive equations (8-10).

As can be seen, the interactive model captures a significantly larger proportion of the variance of each aspect of social modernization.

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(Significance is computed by means of an F test[46] which accounts
for differences in degrees of freedom.) Thus, based upon the analysis
to this point we can conclude: (1) that there is no evidence of a
direct or additive relationship between FDI (per dollar of GDP) and
social modernization and (2) that an interactive relationship is
consistent with the data.

As noted above, appendices IV through VI contain the
interactive models, or systems of pattern variables, for each of
the aspects of modernization in matrix form. (The bottom row and
last column represent the highest levels of FDI and industrialization
respectively.) While caution is necessary when analyzing the re-
gression coefficients, several points can be noted. First, as
would be expected from the very strong correlation between each of
the aspects of social modernization and industrialization, the
coefficients are generally larger at higher levels of industrializa-
tion. Second, the relationship between social modernization and
industrialization is not the same at all levels of FDI; interaction
is present.[47] Third, with one insignificant exception, all coeffi-
cients have positive signs. FDI intensifies the relationship between
social modernization and industrialization. Last there is no pattern
of interaction obvious from the coefficients of the pattern variables.

Conclusions

Any conclusions that can be drawn from this research are limited
by both data and methodological problems. As in most cross-national
research across large numbers of developing countries the raw data is

weak in terms of both accuracy and comparability.[48] Furthermore,
the usual problems encountered when one attempts to establish causal
relationships at the societal[49] level are exacerbated by reliance
on cross-sectional analysis. Investigating historical phenomena
cross-sectionally requires an assumption that individual observations
represent points on a longitudinal path.[50] This obviously does not
present a very good picture of reality, and while not destroying the
usefulness of the analysis, it limits how far one can take the results.

Given these caveats, what can be concluded from this research?
At this point, only that theory and reality do not conflict. The
existence of an interactive, and the absence of an additive, relation-
ship supports the hypothesis that FDI, as a direct and continuous
agent of inter-cultural contact, intensifies the relationship between
social modernization and industrialization. That given the presence
of FDI, a society is likely to be more "modernized," in the sense
in which that term is used in this research, than one would expect
given its level of industrialization. However, further research is
needed to more completely define the interactive model to allow its
use as a basis for prediction and policy making. Efforts are needed
in two directions. First, research on the micro-level[51] to gain a
better understanding of the differences between indigenous and foreign
controlled firms and their interaction with the process of social
modernization. Second, an improvement in the accuracy and compar-
ability of data on the macro or cross-national level. While problems
with socio-economic indicators are well-known and widely discussed,[52]

the weakest link in this research was the data on Foreign Direct Investment. Both conceptual and operational problems -- the reliance on the book value concept and lack of time-series data, for example -- severely limit research in this area.[53]

One last, and important caveat is required. A research conclusion is not a policy recommendation. This paper has considered FDI within very rigid limits; its relationship with social modernization as narrowly defined. Most government policy makers obviously face an infinitely more diverse and complex reality. Thus, it does not follow, that even if accelerating the rate of social modernization is an accepted goal, the gates should be indiscriminately opened to an inward flow of FDI.

This research was undertaken under the explicit assumption that FDI need not be a zero-sum game. Under a wide range of circumstances, _and given a proper framework of regulation_,[54] agreements should be attainable that provide both a reasonable return to the investor and a net positive contribution to development objectives. Thus, it is hoped that this research can mark a step towards determining the non-economic effects of FDI on a scientific basis. Once facts are established, policy makers can rationally evaluate the place of FDI in development plans, to the benefit of the host country and the investor alike.

Table 1

Social Indicator Variables

1. The percentage of the active population in traditional agriculture.

2. The percentage employed in mining and manufacturing industries.

3. The character of agricultural organization reflecting the range between peasant farming and modern commeriial agriculture.

4. The importance of the indigenous middle class.

5. The extent of dualism.

6. Modernization of outlook.

7. The efficiency and modernization of the bureaucracy.

8. The extent of interest articulation by associational groups.

9. Literacy.

10. First and second level school enrollment ratio.

11. Third level school enrollment ratio.

12. Human resource utilization; ten plus eleven with the latter weighted by a factor of five.

13. Urbanization; the percentage of the population in cities of 100,000 or more.

14. Transportation; an index of road and rail length per unit of area adjusted for the concentration of population.

15. Basic family structure reflecting a range from tribal units to nuclear families.

16. The extent of interest articulation by non-associational or ascriptive groups; ethnic, kinship and lineage groups and the like.

17. An index of cultural and linquistic fractionalization.

Table 2

Factor Analysis of Social Modernization

| Variables | Rotated Factors | | | h^2 |
	S_1	S_2	S_3	
1. % Agriculture	-.69	-.48	-.38	.85
2. % Min. and Mfg.	.59	.51	.32	.71
3. Agric. Org.	.69	.32	.24	.64
4. Middle Class	.55	.47	.27	.59
5. Dualism	.78	.47	.14	.85
6. Mod.Out.	.85	.15	.28	.83
7. Bureaucracy	.55	.29	.22	.42
8. Assoc. Groups	.62	.36	.37	.64
9. Literacy	.48	.50	.48	.72
10. Enrol. 1 and 2	.41	.63	.22	.61
11. Enrol. 3	.35	.74	.31	.81
12. Human Res.	.33	.84	.31	.91
13. Urbanization	.44	.63	.38	.72
14. Transportation	.37	.65	.36	.70
15. Family	.43	.30	.69	.74
16. Non. Assoc. Groups	-.37	-.21	-.71	.68
17. Fractionalization	-.09	-.40	-.65	.58

Percent of Total Variance	29	25	17
Cumulative Percent of Variance	29	54	71

Table 3

Correlations of Revised Indices of
Social Modernization with Industrialization

	r	r^2	
Roles	.90	.81	
*Mobility	.85	.72	
*Social Organization	.70	.49	

*revised indices

Table 4

Variance Explained by Categorized
Additive and Interactive Models

Aspect	r^2		F ratio	F @ .05
	Additive	Interactive		
Roles	.80	.85	2.92	2.61
Mobility	.71	.78	3.40	2.61
Social Organization	.85	.89	2.34	2.18

Appendix I

The Country List

Africa

Cameroon
Congo (Kinshasa)*
Ethiopia
Ghana
Ivory Coast
Kenya
The Malagasy Republic
Nigeria
Senegal
South Africa**
Sudan
Uganda
Tanzania
Zambia

North Africa

Algeria
Libya
Morocco
Tunesia
United Arab Republic

Latin America

Costa Rica
Dominican Republic
El Salvador
Guatemala
Honduras
Mexico
Panama
Argentina
Bolivia
Brazil
Chile
Colombia
Ecuador
Peru
Uruguay
Venezuela

The Near East

Iran
Iraq
Jordan
Lebanon
Syria

Asia

Burma
Cambodia
Ceylon
India
Indonesia
Malaysia
Nepal
Pakistan
Philippines
South Korea
Taiwan
Thailand
Vietnam

Europe

Greece
Portugal**
Spain
Turkey

*Now Zaire
**Not included in the analysis of foreign direct investment

Appendix II

Sources and Measurement of Social Variables

1. Percentage of the economically active population in traditional agriculture. (Adelman and Morris, cross-checked against U.N. and I.L.O. data.)

2. Percentage of the economically active population in mining and manufacturing. (Yearbook of Labor Statistics.)

3. Character of agricultural organization reflecting the range from peasant farming to modern commercial agriculture. Countries were divided into groups based upon area studies and the classifications were then validated through interviews with experts. (Adelman and Morris.)

4. Importance of the indigenous middle class. An estimate based upon (1) the percentage of the population engaged in middle class occupations and (2) a qualitative assessment of the importance of expatriates. (Adelman and Morris.)

5. The extent of dualism. A qualitative estimate of the degree of separation of the traditional and modern sectors. Countries are divided into groups (as described under three above) ranging from an overwhelmingly traditional economy to the relatively complete integration of traditional and modern sectors. (Adelman and Morris.)

6. Modernization of outlook. A qualitative estimate (perhaps the most subjective used in this study) of the modernization (in terms of lifestyle) of educated urban groups and the degree of acceptance of programs of social and political modernization among both urban and rural populations. (Adelman and Morris.)

7. The efficiency and modernization of the bureaucracy. An estimate (countries were divided into four groups) of the efficiency and ascriptive versus achievement orientation of the civil service. Efficiency is judged in terms of functionally specific relationships and rational decision making. (Banks and Textor.)

8. The extent of interest articulation by associational groups. This reflects the influence of voluntary groups, such as trade unions and civic associations. (Banks and Textor.)

9. Literacy. The percentage of the adult population (generally over fifteen years of age) that meets a given country's standard of literacy. (Taylor and Hudson.)

10. First and second level school enrollment ratio. The percentage of appropriate age groups enrolled in primary and secondary schools. (Taylor and Hudson.)

11. Third level enrollment ratio. The percentage of appropriate age groups enrolled in university. (U.N.E.S.C.O. Statistical Yearbook.)

12. An index of human resource utilization. A linear combination of variables ten and eleven with the latter weighted by a factor of five. The index is suggested in Harbison, Frederick and Myers, C.A. Education, Manpower and Economic Development. New York: McGraw-Hill, 1964.

13. Urbanization. The percentage of the population living in cities of 100,000 or more. (Taylor and Hudson, and Banks.)

14. Transportation. An index, original to this research, intended as a measure of the potential for horizontal mobility and economic independence. The index is composed of a measure of road and rail length per unit of area multipled by an index of the concentration of the population. The latter is scored so that the more concentrated the population (a greater proportion living in a few large cities rather than in many smaller ones) the higher the index. It is assumed that, ceteris paribus, countries with more diffused populations will tend to have larger transportation networks relative to area. (The Statesman's Yearbook. London: MacMillan, 1967 and 1972; Ginsburg, Norton. Atlas of Economic Development. Chicago: University of Chicago Press, 1961; and Taylor and Hudson.)

15. Basic family structure. Countries were grouped into three classes: those in which tribal allegiances are widespread, those in which the extended family is the norm and those in which the nuclear family predominates. (Adelman and Morris.)

16. The extent of interest articulation by non-associational groups. This reflects the importance of ascriptive groups such as clans and tribes in a society. The index is qualitative; countries were divided into groups based upon country studies. (Banks and Textor.)

17. Cultural and linguistic fractionalization. Countries are scored on a scale ranging from .00 (extremely homogeneous) to .99 (extremely fractionalized). (Atlas Narodov Mira, Academy of Sciences, Moscow, reported in Taylor and Hudson.)

Sources

Irma Adelman and Cynthia Taft Morris, Society, Politics and Economic Development. (Baltimore: Johns Hopkins University Press, 1967).

Arthur S. Banks, Cross-Polity Time-Series Data. (Cambridge: MIT Press, 1971).

Arthur S. Banks and Robert B. Textor, A Cross-Polity Survey. (Cambridge: MIT press, 1963).

Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators: Second Edition. (New Haven: Yale University Press, 1972).

Appendix III

Categorized Additive Models*

Roles = -1.21 + .68IND/2 + 1.13IND/3 + 1.88IND/4 + .99EUR   (1)
               (3.08)**   (4.46)   (6.07)   (2.56)

        (R^2 = .80)

Mob = .08 + 2.54IND/2 + 4.83IND/3 + 8.41IND/4   (2)
         (2.12)   (3.47)   (4.95)

        (R^2 = .71)

Soc. Org. = 4.97 + 2.71IND/4 $-$ 3.59Afr. + 4.73L.A. + 4.47Eur.   (3)
               (2.31)   (3.28)   (4.78)   (3.05)

        (R^2 = .85)

*Only terms whose coefficients are significant at the .05 level
 are included.

**t statistic

Appendix IV

Role Differentiation -- Interactive Model

	IND 1	IND 2	IND 3	IND 4	
FDI/GDP 1	X_1 +	X_2	X_3 2.28* .00**	X_4	
FDI/GDP 2	X_5 + X_9 + X_{13}	X_6 1.38 .01	X_7 1.94 .00	X_8 2.57 .00	
FDI/GDP 3	1.07 .06	X_{10}+X_{14} 1.80 .01	X_{11} 1.58 .00	X_{12} 2.65 .00	
FDI/GDP 4			X_{15} 2.52 .00	X_{16} 2.30 .00	

$$R^2 = .85$$

Regional Variables	Coefficient	Significance
Africa	-.67	.05
Latin America	.71	.01
Near East	.39	.22
Asia	.25	.36
Europe	1.08	.01

 *Coefficient
**Significance

Appendix V

Mobility -- Interactive Model

	IND 1	IND 2	IND 3	IND 4
FDI/GDP 1	X_1	X_2 3.07* .38**	X_3 11.56 .00	X_4
FDI/GDP 2	X_5 3.03 .34	X_6 5.51 .04	X_7 8.12 .01	X_8 10.99 .00
FDI/GDP 3&4	$X_9 + X_{13}$ 6.47 .04	$X_{10} + X_{14}$ 7.88 .02	$X_{11} + X_{15}$ 6.53 .02	$X_{12} + X_{16}$ 10.04 .00

$$R^2 = .78$$

Regional Variables	Coefficient	Significance
Africa	-2.16	.25
Latin America	4.15	.01
Near East	4.32	.02
Asia	3.41	.03
Europe	4.96	.02

*Coefficient
**Significance

Appendix VI

Basic Social Organization -- Interactive Model

	IND 1	IND 2	IND 3	IND 4
FDI/GDP 1	X_1	X_2 5.32* .04**	X_3 5.94 .01	X_4
FDI/GDP 2	X_5 2.89 .21	X_6 2.76 .16	X_7 2.70 .18	X_8 3.58 .09
FDI/GDP 3	X_9 3.45 .15	X_{10} 3.08 .22	X_{11} 2.59 .20	X_{12} 4.31 .06
FDI/GDP 4	X_{13} -2.03 .46	X_{14} 2.66 .32	X_{15} 4.14 .13	X_{16} 4.61 .06

$$R^2 = .89$$

Regional Variables	Coefficient	Significance
Africa	-4.90	.00
Latin America	4.61	.00
Near East	-.54	.66
Asia	-1.66	.14
Europe	4.79	.00

*Coefficient
**Significance

Footnotes

*This paper is based upon the author's dissertation research. I would like to thank Peter Heller, Richard Porter and Vern Terpstra at The University of Michigan, Donald Lessard and Richard Robinson at M.I.T., and Raymond Vernon at Harvard for their very constructive criticism of earlier drafts.

[1] Hans B. Thorelli, "The Multinational Corporation as a Change Agent," The Southern Journal of Business 3 (July 1966): 1-9. In addition, writers on the topic of imperialism have always accepted the influence of FDI on social and political conditions in developing countries. See, Paul A. Baran, "On the Political Economy of Back-wardness," in Imperialism and Underdevelopment: A Reader, ed. Robert L. Rhodes (New York: Monthly Review Press, 1970).

[2] Marion Levy jr., Modernization and the Structure of Societies: A Setting for International Affairs, (Princeton: Princeton University Press, 1966; Princeton Paperback, 1969), p. 11; Wilbert E. Moore, "Industrialization and Social Change," in North American Conference on the Social Implications of Technological Change, eds. Bert F. Hoselitz and Wilbert E. Moore (Paris: Mouton, 1963), p. 91; and James Sidney Slotkin, From Field to Factory: New Industrial Employees (Glencoe: The Free Press, 1960), p. 13.

[3] Clark Kerr, et. al., "Postscript to Industrialism and the Industrial Man," International Labour Review 103 (June 1971): 519-540.

[4] The literature of industrialization and social change is vast. See Levy and Wilbert E. Moore, "Changes in Occupational Structures," in

Comparative Perspectives on Industrial Society, eds. William A. Faunce
and William H. Form, (Boston: Little Brown, 1969), pp. 107 and 109.

[5]Mellville J. Herskovits, "Economic Change and Cultural Dynamics,"
in Tradition, Values, and Socioeconomic Development, eds. Ralph
Braibanti and Joseph Spengler, (Durham: Duke University Press, 1961),
p. 123,and Slotkin, p. 23.

[6]William H. Friedland, "A Sociological Approach to Modernization,"
in Modernization by Design: Social Change in the Twentieth Century,
eds. Chandler Morse et. al., (Ithaca: Cornell University Press, 1969)
p. 79.

[7]John W. Lewis, "The Social Limits of Politically Induced Change,"
in Morse, p. 22.

[8]Joseph J. Spengler, "Theory, Ideology, Non-Economic Values and
Political-Economic Development", in Braibanti and Spengler, p. 3.

[9]It is not suggested that causality flows entirely from industriali-
zation to social modernization. Changes in social structure in the
LDCs certainly "pave the way" for further industrialization. However,
causality is significantly more asymmetrical than it was in the
course of Western development. It is reasonable to consider industriali-
zation as producing or causing changes in social structure in the
current LDCs.

[10]While the idea of convergence is somewhat controversial, there
seems to be acceptance of the concept in the very limited sense used
in this research. See: Caryl P. Haskins, "Science and Policy for a
New Decade," Foreign Affairs 49 (January 1971), p. 239; Bernard Karsh
and Robert E. Cole, "Industrialization and the Convergence Hypothesis:

Some Aspects of Contemporary Japan," <u>Journal of Social Issues</u> 24 (October 1968), p.46; Clark Kerr, et. al., <u>Industrialism and the Industrial Man: The Problems of Labor and Management in Economic Growth</u> 2nd ed. (New York, Oxford University Press, 1964); Levy, p. 103; and Wilbert E. Moore and Arnold Feldman, <u>Labor Committment and Social Change in Developing Areas</u> (New York: Social Science Research Council, 1960), pp. 59 and 60.

[11]Wilbert E. Moore, <u>Industrialization and Labor: Social Aspects of Economic Development</u>, 2nd ed. (New York: Russell and Russell, 1965), p. 13.

[12]In general, the more complex and covert aspects of culture require direct social interaction for transfer. See Raymond D. Firth, <u>Economics of the New Zealand Maori</u>, 2nd ed. (Wellington: R. E. Owen, Government Printer, 1959), p. 484 and Slotkin, p. 23.

[13]John H. Dunning, <u>Studies in International Investment</u> (London: George, Allen and Unwin, 1970), p. 4.

[14]Walter A. Chudson, <u>The International Transfer of Commercial Technology to Developing Countries</u> (New York: United Nations Institute for Training and Research, 1971), p. 7; Dirk W. Stikker, <u>The Role of Private Enterprise in Investment and the Promotion of Exports in Developing Countries</u> (New York: United Nations Conference on Trade and Development, 1968), p. 14; and United Nations Department of Economic and Social Affairs, <u>Multinational Corporations in World Development</u> (New York: United Nations, 1973), p. 49.

[15]See, for example: Ernesto Fernandez-Hurtado, "Private Enterprise

and Government in Mexican Development," in Mexico's Recent Economic Growth: The Mexican View, ed. Perez Lopez (Austin: The University of Texas Press, 1967), pp. 51-55; Claude McMillian jr.; Richard F. Gonzales; and Leo G. Erickson, International Enterprise in a Developing Economy: A Study of U.S. Business in Brazil (East Lansing: Michigan State University Press, 1964), p. 89; Barry M. Richman and Melvin R. Copen, International Management and Economic Development (New York: McGraw-Hill, 1972), p. 152; and Raymond Vernon, The Dilemma of Mexico's Development, (Cambridge: Harvard University Press, 1963), p. 157.

[16] See Bert F. Hoselitz, Sociological Aspects of Economic Growth (Glencoe: The Free Press, 1960), p. 65, for further discussion of the concept of the marginal man.

[17] McMillian, Gonzales, and Erickson; and Richman and Copen.

[18] Socialist bloc countries have been excluded from many studies of development due to problems of comparability. See Irma Adelman and Cynthia Taft Morris, Society, Politics and Economic Development (Baltimore: John Hopkins University Press, 1967), p. 106 and Simon Kuznets, Modern Economic Growth (New Haven: Yale University Press, 1966), p. 508.

[19] A 1970 UNRISD study, for example, excluded countries with a population of less than one million because of the "special circumstances that apply to so many of them." See D. V. McGranahan, Concepts and Measurement of Socio-economic Development (New York: Praeger, 1972), p. 14.

[20] It is difficult to objectively establish an "upper limit" or "cut-off point" for developing countries. While there are well known

problems with GNP per capita as a comparative measure of development, it is probably the most generally used index and is adequate for definition of the sample.

[21] Kuznets, p. 400.

[22] Saudi Arabia was dropped due to data problems. Furthermore, data for FDI was not available from the OECD study for either Portugal or South Africa. Therefore, while fifty-nine countries were included in the analysis of industrialization and modernization, only fifty-seven were used when FDI was included as a variable.

[23] Twenty-two indicators were initially considered; five were dropped. One of those eliminated was virtually uncorrelated with any of the other indicators and the remainder were either very sensitive to changes in parameters or combinations of variables (they tended to load randomly on a given factor) or proved to be redundant.

[24] Principal sources were, The U.N. Statistical Yearbook, the U.N. Demographic Yearbook, the Yearbook of Labour Statistics, The Statesman's Yearbook, and data collections such as: Arthur S. Banks, Cross-Polity Timeseries Data (Cambridge: MIT Press, 1971); Arthur S. Banks and Robert B. Textor, A Cross-Polity Survey (Cambridge: MIT Press, 1963), Bruce M. Russett, 1964 World Handbook of Political and Social Indicators (New Haven: Yale University Press, 1964); and Charles Lewis Taylor and Michael C. Hudson, World Handbook of Political and Social Indicators: Second Edition (New Haven: Yale University Press, 1972).

[25]Adelman and Morris; Banks and Textor.

[26]See Karl Deutsch et. al., "The Yale Political Data Program," in Comparing Nations: The Use of Quantitative Data in Cross-National Research, eds. Richard L. Merritt and Stein Rokkan (New Haven: Yale University Press, 1966), p. 90 for a discussion of estimating missing data in cross-national research.

[27]Jum C. Nunnally, Psychometric Theory (New York: McGraw-Hill, 1967), p. 289.

[28]The source for national income data was the U.N. Yearbook of National Accounts Statistics.

[29]The problems with using the book value of assets as an indicator of direct investment are legion, and well known. However, it is the only indicator available on a widespread basis. Furthermore, some of the problems of comparability are mitigated when the investigation is limited to developing countries as indigenous capital markets tend to be underdeveloped. The Development Assistance Committee countries include: Australia, Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, Norway, Portugal, Sweden, Switzerland, the U.K., and the U.S.

[30]While agricultural investment may represent a vehicle for the transfer of the institutions of industrialization in the sense used in this research, this is not necessarily the case. Furthermore, the age of much agricultural investment makes book value a particularly poor proxy for its importance.

[31] Log transformations are often used in cross-national research to compensate for skewness in the data. See Arthur S. Banks, "Industrialization and Development: A Longitudinal Analysis," _Economic Development and Cultural Change_ 22 (January 1974), p. 321.

[32] For a discussion of dummy variable regression analysis see: Daniel B. Suits, "The Use of Dummy Variables in Regression Analysis," _Journal of the American Statistical Association_ 52 (December 1957): 548-551. As all dummy variables are either zero or one, and as all cases are included in the set, six regions can be represented by five dummy variables. Using N dummy variables to represent N variables would result in an indeterminate solution.

[33] Both the regions and their bounds were taken from Banks and Textor p. 55. The dummy representing North Africa was "dropped" to avoid redundancy (see note 32), as experimentation revealed its coefficient was typically insignificant. One, of course, "drops" a given dummy in a set of zero-one variables but not its effect upon the equation. If N-1 dummy variables for a given case are zero, then in a set of N, the Nth must be one.

[34] The technique is suggested in Suits.

[35] The reader is reminded that one dummy variable in each of the sets must be dropped to solve the equation.

[36] Significance was determined via an F ratio known as the sequential

F Test: $$F = \frac{R_i - R_a}{D_{ri} - D_{ra}} \bigg\backslash \frac{E_i}{D_{ei}}$$

Where R_i and R_a are the regression sum of squares for the interactive
and the additive models, D_{ri} and D_{ra}, the corresponding degrees
of freedom, E_i the error sum of squares for the interactive model
and D_{ei} the corresponding degrees of freedom. See N. R. Draper and
H. Smith, Applied Regression Analysis (New York: Wiley, 1961,) p. 119.

[37] One the term cFDI is dropped from equation (1), regressing
social modernization on equations (3) and (4) sequentially is analogous
to testing for interaction via (2). The independent variables are,
of course, categorized in (3) and (4).

[38] The varimax routine is an orthogonal procedure which "force fits"
the factors to a statistically independent relationship. While
this is generally useful, the possibility exists that the factors may
represent constructs which are not in reality independent. To investi-
gate this possibility an oblique rotation (promax) was attempted. Re-
sults, however, aere virtually identical to those produced by the
varimax rotation.

[39] Please refer to the authors dissertation for a more complete
description of variables including sources. Stephen J. Kobrin, "Foreign
Direct Investment, Industrialization and Social Change: Acculturation
and Modernization in Developing Countries" (Ph.D. diss., The University
of Michigan, 1975).

[40] The names given to factors are intended only as mnemonic devices
and not as self-sufficient descriptions of processes encompassed.

[41]This may quite accurately reflect literacy's central role in modernization. See Daniel Lerner, The Passing of Traditional Society: Modernizing the Middle East (New York: The Free Press, 1958), p. 64.

[42]Factor scores are simply scores for each case for each factor derived from the loadings and the original variables. Each variable is weighted proportionally to its involvement in the factor. See Rudolph J. Rummel, Applied Factor Analysis (Evanston: Northwestern University Press, 1970), p. 150.

[43]Levy, p. 232; Moore, "Industrialization and Social Change," p. 110; and Melvin M. Tumin, "Competing Status Systems," in Moore and Feldman, p. 315.

[44]Each of the aspects of social modernization was regressed on a continuous interactive model (equation 2). However, the coefficient of the interactive term (cFDI x IND) did not even approach significance at the .05 level. Thus categorized (dummy variable) models were used to avoid problems of "fitting" a non-linear model.

[45]One could, for example, logically combine the first and second levels of industrialization for the third level of FDI. It would make no sense, however, to combine the first level of industrialization and the third level of FDI with the entry representing the second level of industrialization and the fourth level of FDI.

[46]See note 36.

[47]A first order interaction implies that the relationship between either of the independent variables and the dependent variable is not constant for all values of the other independent variables. See Hubert M. Blalock jr., Theory Construction (Englewood Cliffs: Prentice Hall,

1969), p. 155.

[48] John V. Gillespie, "An Introduction to Macro Cross-National Research," in Macro Quantitative Analysis: Conflict Development and Democratization (Beverly Hills: Sage Publications, 1971), p. 21 and McGranahan, Contents and Measurement, p. vii.

[49] The obvious problem in attempting to prove causality at the societal level (or perhaps in any but the most rigidly controlled experiment) is the impossibility of isolating the variables in question. For a thorough discussion of the matter see Hubert M. Blalock jr., Causal Inferences in Non-Experimental Research (Durham: University of North Carolina Press, 1964; Norton and Company, 1972).

[50] Adelman and Morris, p. 149 and Bruce M. Russett, "The Yale Political Data Program: Experience and Prospects," in Merritt and Rokkan, p. 104.

[51] The author's dissertation, on which this paper is based, contains a case study of industrialization and social modernization in Mexico and Venezuela. The micro study was included as an attempt to "observe" the processes under consideration, over time, in two societies which differed significantly in their utilization of FDI.

[52] Gillespie, p. 21; McGranahan, Contents and Measurement, p. vii; Rusett, "The Yale Political Data Program," p. 98; and Taylor and Hudson, p. 7.

[53] While U.S. data on direct investment for the past twenty years is fairly complete, data from other countries (with the possible ex-ception of the U.K.) is rather sketchy. Further, there is a major prob-

lem of comparability, even where data from several source countries

exists. The O.E.C.D. study, used as the basic source of FDI data

in this research, stands virtually alone. It should be inherently

obvious to the most casual observer that adequate FDI data, which can

be disaggregated by host and source country and by economic sector,

is an absolute prerequisite to further empirical work which can

serve as a basis for either prediction or policy making.

[54]Barbara Ward; J. D. Runnals; and Lenore D'Anjou, The Widening
Gap (New York: Columbia University Press, 1971), p. 2.